

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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|--|---|---|-----------------------|
| Applicant's or agent's file reference T-517 | FOR FURTHER ACTION | | See Form PCT/IPEA/416 |
| International application No. PCT/JP2004/004620 | International filing date (day/month/year) 31.03.2004 | Priority date (day/month/year) 31.03.2003 | |
| International Patent Classification (IPC) or national classification and IPC | | | |
| Applicant TEIJIN LIMITED | | | |

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|---|-------------------------------------|---|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 12 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>4. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | <input checked="" type="checkbox"/> | Box No. I | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. II | Priority | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VI | Certain documents cited | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application | | | | | | | | | | | | | | | | | | | | | | |

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| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004620

Box No. I Basis of the report

- With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
- With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

the international application as originally filed/furnished

the description:
pages 2, 6-14 as originally filed/furnished
pages* 1, 1/1, 3-5 received by this Authority on 26.11.2004
pages* _____ received by this Authority on _____

the claims:
nos. 2, 8, 10-14 as originally filed/furnished
nos.* _____ as amended (together with any statement) under Article 19
nos.* 1, 4, 7 received by this Authority on 26.11.2004
nos.* 6 received by this Authority on 22.06.2005

the drawings:
sheets 1-3 as originally filed/furnished
sheets* _____ received by this Authority on _____
sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
- The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. 3, 5, 9
 the drawings, sheets/figs _____
 the sequence listing (specify): _____
 any table(s) related to sequence listing (specify): _____
- This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages 3, 4, 6
 the claims, nos. 1, 7, 12
 the drawings, sheets/figs _____
 the sequence listing (specify): _____
 any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2004/004620

| | | |
|-----------|---|--|
| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | |
|-----------|---|--|

1. Statement

| | | | |
|-------------------------------|--------|---------------------|-----|
| Novelty (N) | Claims | 1, 2, 4, 6-8, 10-14 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1, 2, 4, 6-8, 10-14 | NO |
| Industrial applicability (IA) | Claims | 1, 2, 4, 6-8, 10-14 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

Document 1: JP 2001-521789 A (Children's Medical Center Corporation), 13 November 2001, entire text; all drawings

Document 2: WO 98/22155 A1 (Tropic International Co., Ltd.), 28 May 1998, entire text; all drawings

Document 3: WO 98/24385 A1 (Tropic International Co., Ltd.), 11 June 1998, entire text; all drawings

Document 4: JP 5-337143 A (Terumo Corporation), 21 December 1993, paragraph [0004]

Document 5: JP 2002-159502 A (Sosuke Kimura), 4 June 2002, paragraphs [0043] and [0044]

Document 6: JP 62-186864 A (Kanebo, Ltd.), 15 August 1987, entire text

Document 7: JP 52-110977 A (Imperial Chemical Industries Limited), 17 September 1977, entire text

The invention set forth in claims 1, 2 and 4 does not involve an inventive step in the light of documents 1 to 5 cited in the international search report. Documents 1 to 3 belong to similar technical fields, therefore it would be easy for a person skilled in the art to conceive

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement

of applying the feature set forth in documents 2 and 3, wherein a collagen layer is provided, to the tube tissue of an artificial blood vessel comprising a synthetic polymer matrix formed of polyglycolic acid with a fiber diameter of 15 μ m, as set forth in document 1. In addition, a concertina structure is a known feature in artificial blood vessels (see document 4, paragraph [0004] and document 5, paragraph [0044]), and it would be easy for a person skilled in the art to employ said structure as necessary.

The inventions set forth in claims 6 to 8, 10 and 11 do not involve an inventive step in the light of documents 1 to 6 cited in the international search report. In addition to the matters indicated above, document 6 sets forth a technique of optimizing the basis weight of fiber structure in artificial blood vessels. In addition, optimizing the depth and interval of a concertina could be accomplished within the normal creative capacity of a person skilled in the art, and the characterizing features of the inventions set forth in claims 7 and 12 of this application are not acknowledged to offer a particular effect.

The invention set forth in claims 12 to 14 does not involve an inventive step in the light of documents 1 to 7 cited in the international search report. In addition to the matters indicated above, document 7 sets forth a feature wherein electrostatic spinning is used when producing fiber which constitutes artificial blood vessels.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

(Continuation of Box I)

The feature wherein "the depth of the concertina falls within the range of 0.1mm to 1mm" goes beyond the scope of disclosure of the international application at the time of filing.